

## WHAT IS CLAIMED IS

1. A method of initiating forward error correction in an ethernet passive optical network including at least one optical network unit, comprising the steps of:
  - (a) upon receiving forward error corrected data from the at least one optical network unit, responding thereafter with forward error corrected data; and
  - (b) upon receiving data not forward error corrected from the at least one optical network unit, responding thereafter with data not forward error corrected.
2. A method of initiating forward error correction in an ethernet passive optical network including an optical line terminal, comprising the steps of:
  - (a) upon receiving forward error corrected data from the optical line terminal, responding thereafter with forward error corrected data; and
  - (b) upon receiving data not forward error corrected from the optical line terminal, responding thereafter with data not forward error corrected.
3. A method of managing forward error correction in an ethernet passive optical network including at least one optical network unit, comprising the steps of:
  - (a) monitoring communications quality from the at least one optical network unit, thereby determining a figure of merit of said communications;
  - (b) upon finding said figure of merit to be insufficient, transmitting thereafter forward error corrected data to the at least one optical network unit; and

- (c) upon finding said figure of merit to be sufficient,  
transmitting thereafter data not forward error corrected data to the at  
least one optical network unit.
4. The method, according to claim 3, wherein said figure of merit is selected  
from the group consisting of:
- (i) bit error rate,
  - (ii) parity violation rate,
  - (iii) 8B/10B coding violation rate; and
  - (iv) frame error rate.
5. A method of managing forward error correction in an ethernet passive  
optical network including an optical line terminal, comprising the steps of:
- (a) monitoring communications quality from the optical line terminal,  
thereby determining a figure of merit of said communications;
  - (b) upon finding said figure of merit to be insufficient, transmitting  
thereafter forward error corrected data to the optical line terminal; and
  - (c) upon finding said figure of merit to be sufficient,  
transmitting thereafter data not forward error corrected to the optical  
line terminal.
6. The method, according to claim 5, wherein said figure of merit is selected  
from the group consisting of:
- (i) bit error rate,
  - (ii) parity violation rate,
  - (iii) 8B/10B coding violation rate, and
  - (iv) frame error rate.